

Translation

PATENT COOPERATION TREATY

PCT/JP2003/011678



PCT Rec'd PCT/PTO 28 MAR 2005

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

10/528759

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PO84PCT1027	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP2003/011678	International filing date (day/month/year) 12 September 2003 (12.09.2003)	Priority date (day/month/year) 24 October 2002 (24.10.2002)
International Patent Classification (IPC) or national classification and IPC A61B 5/055, G01R 33/3815		
Applicant HITACHI MEDICAL CORPORATION		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.  <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of _____ sheets.
3. This report contains indications relating to the following items:  I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 12 September 2003 (12.09.2003)	Date of completion of this report 02 March 2004 (02.03.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP2003/011678

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-35	YES
	Claims		NO
Inventive step (IS)	Claims	3, 9, 14, 18-20, 35	YES
	Claims	1, 2, 4-8, 10-13, 15-17, 21-34	NO
Industrial applicability (IA)	Claims	1-35	YES
	Claims		NO

**2. Citations and explanations**

Document 1: JP 8-504107 A  
Document 2: JP 1-117004 A  
Document 3: JP 9-224919 A  
Document 4: JP 1-126956 A  
Document 5: JP 63-88810 A  
Document 6: JP 2002-209869 A  
Document 7: JP 2002-143126 A

Claim 8

Document 1 sets forth a magnetic resonance imaging device provided with a means of electromagnetically shielding the superconducting coil circuit from the outside of the container (see page 8, line 25 to page 9, line 9).

Moreover, it is a known technique to provide the superconducting coil circuit of a magnetic resonance imaging device with a permanent current switch, as set forth in document 2 (page 3, upper right column, line 13 to lower left column, line 1; fig. 1).

It would therefore be easy for a person skilled in the art to constitute the invention set forth in claim 8 in the light of the inventions set forth in documents 1 and 2.

Claims 1, 2, 4 to 7, 10 to 13, 15 to 17 and 21 to 34

Document 3 sets forth a magnetic resonance imaging device provided with a low-pass filter which eliminates RF noise between a sensor element provided to a superconducting coil circuit for measuring the amount of liquid helium (liquid helium level sensor (2)), and a control/monitoring circuit (environmental monitoring device (10)) (see paragraph 3, line 47 to paragraph 4, line 7; fig. 1 and 2). This low-pass filter shuts out the closed loop formed between the control/monitoring circuit and the superconducting coil circuit.

In addition, it is a known technique to provide a permanent current switch to the superconducting coil circuit of a magnetic resonance imaging device, as set forth in document 2 (page 3, upper right column, line 13 to lower left column, line 1; fig. 1).

In addition, it is a known technique to provide a ground point to the electric circuit and superconducting magnet of a magnetic resonance imaging device, as set forth in document 4 (page 2, upper left column, lines 8 to 11) and document 5 (fig. 3).

Document 6 indicates that the superconducting magnet of a magnetic resonance imaging device comprises a pair of cryostats positioned above and below a measurement space and interconnected by a coupling tube (see paragraph 5, line 20 to paragraph 6, line 39; fig. 3).

Moreover, it is a known technique to connect a switching circuit between the control circuit and heater element of a magnetic resonance imaging device, as set forth in document 7 (paragraph 16, line 23 to paragraph 17, line 38; fig. 12).

It would therefore be obvious to a person skilled in the art to constitute the inventions set forth in claims 1, 2, 4 to 7, 10 to 13, 15 to 17 and 21 to 34 in the light of document 3 and the aforementioned known techniques.

Claims 3, 9, 14, 18 to 20 and 35

The provision of terminals for connecting the heater element and monitor element inside a cryostat to an external circuit on the outer wall of the cryostat, and the formation of a closed loop circuit in this terminal unit, containing the outer wall of the cryostat and the ground point provided on this outer wall, is not disclosed in any of the documents cited in the international search report, and would not be obvious to a person skilled in the art.